ABSTRACT OF THE DISCLOSURE

System and method for reducing temperature variation among components in a multi-component system. In this respect, component temperatures are controlled to remain relatively constant (approximately within 5 °C) with respect to other components, while allowing for multiple fluctuating heat loads between components. A refrigeration system possessing a variable capacity (speed) compressor and an electronic valve is utilized to control the flow of refrigerant through the refrigeration system. The temperature of the components is reduced by metering the mass flow rate of the refrigerant cooling the components to compensate for the heat load applied to the refrigeration system. The temperature variation among the components is reduced by supplemental heaters independently providing heat to respective evaporators of any relatively inactive, and therefore relatively cooler, component with respect to other components, the supplemental heater may add heat to the respective evaporator, such that the temperature of the relatively inactive component is not reduced below the specified temperature range.